EDITORIAL

Ethical justification for the use and treatment of fishes in research: an update

Readers of, and contributors to, the Journal will be aware that the Journal continually strives to ensure that papers published promote best practice and ethical use of live animals, including fishes, and are aware of the associated public debate. Currently, contributors to the Journal of Fish Biology in the course of their research are required to adhere to the Guidelines for the Use of Animals in Research published in Animal Behaviour (1998), 55, 251–257 (see Item 16 in Instruction to Authors) and the guidance published in this Journal more recently [Journal of Fish Biology (2006), 68, 1–2].

Recent experience indicates that authors are clearly paying more attention to welfare and ethical issues; nonetheless, it has become apparent that more specific guidance is needed with respect to studies that involve lethal endpoints, predation of live prey and euthanasia. The following is intended as guidance, but authors should be mindful that the Journal will not publish studies that might cause unnecessary, avoidable or insufficiently justified adverse effects, or lasting harm, to a sentient animal.

1. Lethal endpoints: Studies involving lethal endpoints need to be fully and clearly justified. Authors need to explain (1) why a non-lethal endpoint would fail to achieve the objectives, (2) how the benefit gained (or expected) balances the harm caused and (3) what mitigation was used to minimize adverse effects, both in terms of individuals and the numbers of animals used.

2. Predation of live prey: Similarly, studies involving predation of live prey need to be fully and clearly justified and authors need to explain why alternative (e.g. invertebrate) prey, or an alternative predator and prey model, could not be used. Again, the authors must justify how the benefit gained (or expected) balances the harm caused.

3. Euthanasia: Where animals have to be killed, this must be carried out as humanely as possible. For larger fishes, overdose of anaesthesia or percussion stunning followed, in either case, by destruction of the brain is currently considered the most appropriate and is approved under current U.K. legislation and anticipated EU legislation. For smaller fishes, particularly larvae, this method is not practical and killing by immersion in ice or a fixative (e.g. ethanol or formalin) is often more appropriate. This should be preceded, however, by rendering the fishes insentient, e.g. by using an overdose of an appropriate anaesthetic. Any non-use of anaesthesia on the grounds that it would compromise the aim of the study will need to be fully justified.
As identified in the previous guidance, authors need to explain both in the declaration that accompanies a submitted manuscript and in the text of the manuscript itself how the care and use of experimental animals complies with any and all relevant national and local animal welfare laws, guidelines and policies, and evidence is required to show that protocols involving the use of animals have undergone an ethical review process, such as by an institutional animal care and use (or similar) committee, a local ethics committee, or by appropriately qualified scientific and lay colleagues. Nonetheless, the Journal is mindful that some ethical approval processes may be rather generic and that such general ethical approval in itself is not necessarily proof that a specific experiment is ethically justified by default; authors must therefore provide specific justification (as above) in the Methods section of their papers.

J. D. Metcalfe, *Journal of Fish Biology* Ethics Committee
J. F. Craig, Editor-in-Chief